

Molecular Biology

MARINER MUTAGENESIS OF THE SYMBIOTIC-PATHOGENIC BACTERIUM
XENORHABDUS NEMATAPHILA, TO ISOLATE STRAINS THAT ARE DEFECTIVE
IN SYMBIOSIS.

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Xenorhabdus nematophila is a symbiotic bacterium belonging to the family *Enterobacteriaceae* that inhabits the intestine of a specific entomopathogenic nematode. The bacterium-nematode symbiotic pair is pathogenic for larval stage insects. Once the infective juvenile nematode enters the insect larval haemocoel, the bacteria are released from the nematodes into the haemolymph where they proliferate and release a variety of toxins and hydrolytic enzymes. *X. nematophila* also produces antibiotics, intracellular protein crystals and a variety of extracellular secretions. In order to understand the molecular processes involved in the symbiotic interaction with the nematode a mariner transposon mutagenesis approach was taken. The mariner system was used because it produces more random transposon insertion than the mini Tn10 transposon which was previously used. Mutants were screened for the ability to bind the dye Congo Red. Since Congo Red binds to cell surface components, mutants defective in Congo Red binding are thought to have altered cell surface properties. The screening identified three strains of *X. nematophila* that were not able to bind Congo Red and showed a wild-type phenotype for all other traits tested. The sequence of the mutants will be presented as well as an analysis of their interaction within the host nematodes and the pathogenic effects of the pair on insect larvae